



BOYS' HIGH SCHOOL AND COLLEGE
SECOND TERM EXAMINATION (2023-24)
CLASS - IX
ROBOTICS

Time: 2:00 hrs

General Instructions:

- Answers to this Paper must be written on the paper provided separately.
- The time given at the head of this Paper is the time allowed for writing the answers.
- This Paper is divided into two Sections.
- Attempt **all** questions from Section A and any **four** questions from Section B.
- The intended marks for questions or parts of questions are given in brackets [].

Section A [40 Marks]
(Attempt ALL Questions)

Question 1: Multiple Choice Questions

[20X1 Marks]

- A) Who developed Python Programming Language?
- a) Wick van Rossum
 - b) Rasmus Lerdorf
 - c) Guido van Rossum
 - d) Niene Stom
- B) What will be the value of the following Python expression?
 $4 + 3 \% 5$
- a) 7
 - b) 2
 - c) 4
 - d) 1
- C) Which of the following is used to define a block of code in Python language?
- a) Indentation
 - b) Key
 - c) Brackets
 - d) All of the mentioned
- D) What is the goal of Artificial Intelligence?
- a) To solve artificial problems
 - b) To extract scientific causes
 - c) To explain various sorts of intelligence
 - d) To solve real-world problems
- E) Which of these is a type of data?
- a) Quantitative
 - b) Qualitative
 - c) Both A & B
 - d) None of these
- F) Which of these statements is true?
- a) Information is a part of data.
 - b) Data is a part of information.
 - c) Data and information are opposite in nature.
 - d) None of the above
- G) Which of the following are known as universal gates?
- a) NAND & NOR
 - b) AND & OR
 - c) XOR & OR
 - d) EX-NOR & XOR

H) The octal equivalent of the decimal number $(417)_{10}$ is _____

- a) $(641)_8$
- b) $(619)_8$
- c) $(640)_8$
- d) $(598)_8$

I) The equivalent of the decimal number $(60)_{10}$ is $(?)_4$

- a) 33
- b) 330
- c) 220
- d) 60

J) A NOR gate means.

- a) Inversion followed by an OR gate
- b) OR gate followed by an inverter
- c) NOT gate followed by an OR gate
- d) NAND gate followed by an OR gate

K) Which one of the following is not the graphical representation of statistical data:

- a) Bar graph
- b) Scatterplots
- c) Pie chart graph
- d) Cumulative frequency distribution

L) If the outcome at any decision stage is unique and known for the problem, then the Dynamic programming problem is known as:

- a) Probabilistic dynamic programming problem
- b) Stochastic dynamic programming problem
- c) Static dynamic programming problem
- d) Deterministic dynamic programming problem

M) What is the main purpose of General Data Protection Regulation (GDPR)?

- a) To protect people's personal information.
- b) To help police, doctors, the army, etc., to get information.
- c) To help everyone find information.
- d) All of the above.

N) What is data privacy?

- a) Data privacy is the protection of personal data
- b) Users who should not have access to it
- c) The ability of individuals to determine who can access their personal information
- d) All of the above mentioned.

O) What is personal data?

- a) Information that relates to a specific person
- b) It can't be access by unauthorized people
- c) Both A and B
- d) None of the above mentioned

P) Among which of the following is a component of data privacy?

- a) Management of data risk
- b) Data loss prevention
- c) Password management
- d) All of the above mentioned

- Q) Which of the following is not in DIKW Model?
- Work
 - Information
 - Data
 - Knowledge
- R) Python and C programming files are saved with the extension as ...?
- .pe and .c
 - .py and .cpp
 - .py and .c
 - .python and .c
- S) IDLE stands for ...?
- Integrated Development and Learning Environment.
 - Interactive Development and Learning Environment.
 - Integrated Debugging and Learning Environment.
 - Interactive Debugging and Learning Environment.
- T) Data Analysis is a process of?
- inspecting data
 - cleaning data
 - transforming data
 - All of the above

Question 2: Short Answer Questions [10*2 Marks]

- Describe data and its types.
- Explain the difference between discrete and continuous data.
- Describe the hierarchy of the DIKW model with suitable diagram.
- Describe the stages of the Data Analysis process.
- State any 5 methods of data acquisition.
- Design a logic circuit diagram to implement AND Gate using NOR gate.
- Design a logic circuit diagram to implement OR Gate using NAND gate.
- Design a logic circuit diagram to implement AND Gate using NAND and OR Gate using NOR Gate.
- Design a logic diagram of XOR Gate with expression and truth table.
- With the help of diagram show that step by step process of converting high level language to machine level language.

Section B [60 Marks]
(Attempt ANY FOUR out of SIX Questions)

3. Differentiate the following terms with suitable examples (in Python programming).
- = and ==
 - / and //
 - * and **
4. What is the mode of interaction in Python. Using this explain user input and user output. Write a Python program to take inputs from users and perform simple arithmetic operations (Add, Sub, Div, Mul) and show the output.
5. Write a program to take two inputs from the user and swap them using Python and C both programming language.
6. What is indentation in Python. Write a Python program to input 5 subjects marks from user and outputs average marks.
7. Explain type conversion with suitable examples in Python. Write a Python program to calculate the compound interest. All inputs must be taken from the user.
8. Explain rules for creating an identifier in Python. Write a program to check whether a number entered by the user is even or odd using Python and C both programming languages.
